

WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY  
LETTERS PATENT OF THE UNITED STATES IS:

1. A method of operating a flue gas purifying plant  
5 (10) having at least one absorber chamber (11) in which  
CO and NO are oxidized simultaneously by means of a  
catalyst in a first absorber (15) according to the  
SCONOX principle and the resulting NO<sub>2</sub> is absorbed on  
the catalyst surface, in which, furthermore, SO<sub>2</sub> is  
10 oxidized by means of a catalyst in a second absorber  
(14) connected upstream of the first absorber (15)  
according to the SCOSOx principle and the resulting SO<sub>3</sub>  
is absorbed on the catalyst surface, in which method  
the absorber chamber (11) is separated from the flue  
15 gas flow in regularly recurring regeneration cycles and  
is regenerated by means of a regeneration gas  
containing hydrogen and/or hydrogenous compounds, the  
two absorbers (14, 15) of the absorber chamber (11)  
being regenerated one after the other, characterized in  
20 that regeneration gas flows through the two absorbers  
(14, 15) against the direction of the flue gas flow  
during the regeneration.

2. The method as claimed in claim 1, characterized in  
25 that the regeneration gas, in the direction of the flue  
gas flow, is in each case fed downstream of the  
absorbers (14, 15) and is discharged upstream of the  
second absorber (14).

30 3. The method as claimed in either of claims 1 or 2,  
characterized in that, during the regeneration phase,  
the second absorber (14) is regenerated first and then  
the first absorber (15) is regenerated.

35 4. An apparatus for carrying out the method as  
claimed in claim 1, comprising at least one absorber  
chamber (11) which lies in the flue gas flow and can be

separated from the flue gas flow from time to time, preferably by dampers (12, 13), and in which the two absorbers (14, 15) are arranged one behind the other in the direction of the flue gas flow, characterized in that, in the direction of the flue gas flow, a feed line (27, 28) provided with an inlet valve (17, 19) and intended for the regeneration gas opens into the absorber chamber (11) in each case downstream of each of the two absorbers (14, 15) in the direction of the flue gas flow, and in that a discharge line (21) provided with an outlet valve (16) and intended for the used regeneration gas branches off from the absorber chamber (11) upstream of the second absorber (14) in the direction of the flue gas flow.

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5. The apparatus as claimed in claim 4, characterized in that a reformer (20) is provided for producing the regeneration gas, to which reformer (20) natural gas (22) or other hydrocarbons and steam (23) are fed, and in that the feed lines (27, 28) are connected to the outlet of the reformer (20).

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